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UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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APPLE INC.,

Petitioner

v.

OPTIS WIRELESS TECHNOLOGY, LLC,  
Patent Owner.

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Case IPRIPR2020-00466

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**DECLARATION OF MARK LANNING IN SUPPORT OF  
PETITION FOR *INTER PARTES* REVIEW OF  
U.S. PATENT NO. 8,411,557**

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## I. INTRODUCTION

1. My name is Mark Lanning.

2. I am currently the President of three consulting companies: Telecom Architects, Inc., I.N. Solutions, Inc., and Reticle Consulting, LLC. All three companies provide professional consulting services and custom software development different technical areas. Telecom Architects, Inc. was established in 1999 to provide specialized consulting services to fixed and wireless telecom service providers and their suppliers. I.N. Solutions (Intelligent Networking Solutions) was established in 1991 with an emphasis on applications design and network architecture engineering for telephone-based switching and Advanced Intelligent Networking systems. Reticle Consulting was created in 2009 to provide specialized consulting services for forensic software analysis and software source code comparison for misappropriation cases.

3. I have over 40 years' experience in a wide variety of communication technologies including, but not limited to, paging systems and pager protocols, modems and modem protocols, circuit-switched and packet-switched networks, cellular networks and their components, advanced cellular network based services, Public Switched Telephone Network ("PSTN") networks, VoIP networks, Advanced services that use Intelligent Networking ("AIN") network elements, and

various signaling protocols (e.g., Signaling System 7 (“SS7”) and Integrated Digital Services Network (“ISDN”).

4. For at least 30 years, I have worked with wireless communications systems of different types, and have worked as either a development engineer or system architect in each of the three generations of cellular systems

5. Beginning in 1984, I was a member of a team responsible for converting a PSTN switch into a cellular mobile switching center that Motorola and other companies used extensively in cellular networks located the U.S. and other countries. I have also been a member or manager of development teams that built cellular network elements and specialized cellular applications. These network element types include at least: base station; home location register; short and multimedia message centers; intelligent peripherals; personal number plans; and pre-paid billing systems. These applications include, but are not limited to, creating, processing and delivering Short Message Service (SMS) and Multimedia Message Service (MMS) messages in cellular networks and cellular phones.

6. Since 1991, I have been responsible for the design and implementation of various cellular network systems. For example, I was the program manager responsible for the design and rollout of BT’s Advanced Cellular Network (ACN) that used AIN functionality. BT’s ACN was one of the largest cellular networks in the world and also includes advanced corporate virtual

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